

**IN THE SPECIFICATION**

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**SLEEPING BAG****Description**

— This invention concerns a sleeping bag constructed of side by side chambers formed by dividing walls and filled with stuffing material, inner and outer shells that cover the chambers and a zipper.

— Sleeping bags designed for various purposes have been available in many different styles for a long time. When sleeping outdoors (without a tent), it is desirable to have protection from dampness and wetness caused by rain, dew, or snow. For this reason, sleeping bags are available with waterproof outer shells. One example in current use is Super Dryloft from Gore, a membrane made of stretched Gore-Tex that is laminated onto nylon. Stretching the membrane increases the membrane's water vapor permeability. However, it is moisture resistant and completely windproof. Micro-fiber fabrics, such as Pertex nylon, are used for less demanding requirements. Although these sleeping bags are essentially waterproof, they exhibit weak spots, especially in places where there are external seams. In order to address this issue, it has been proposed to equip sleeping bags with separate outer coverings (like that available under the trade name C-tex) under which is located a cover made of vapor-permeable laminate. However, this necessitates carrying and packing an additional item.

— The purpose of this invention is to create a waterproof sleeping bag, the resistance characteristics of which are improved and with which it is unnecessary to carry additional

item.

— This purpose is fulfilled with the features described in Claim 1. The additional claims detail the invention's characteristics and further developments.

— According to the invention, a sleeping bag consists of side by side chambers formed by dividing walls and filled with stuffing material, inner and outer shells that cover the chambers, and a zipper. The sleeping bag is characterized by the outer shell, which is made of a waterproof material; the outer shell and dividing walls or the outer shell and the attachment strips (bonded to the dividing walls), which consist of a weldable or glueable material; and the dividing walls, which are welded or glued at their ends or through the use of attachment strips to the inside of the outer shell. If dividing walls are used that are not weldable or glueable, these will be sewn to the attachment strips. It is preferable for the sleeping bag to have a waterproof zipper or a zipper that is covered with a waterproof outer flap, whereby, it is preferable for the outer flap to be welded or bonded to the outer shell.

It is preferable for the outer shell and the attachment strips to be constructed from a thermoplastic material like PVC or polyurethane or from a fabric that is coated with these materials. For welding, any material may be used that can be welded using common methods (high frequency welding, hot air welding, hot sealing with the use of welding aids, heated wedge pressure welding, heat pulse welding, radiant heat welding).

In order to maintain convection and promote evaporation, the dividing walls should be constructed of materials like tricot or mosquito netting fabric. The inner shell will be constructed preferably in the common manner from cotton, nylon fabric, or polyester fabric, in other words, a breathable textile and the dividing walls are sewn up with this material at their other, inner ends. The filling will be down or synthetic fibers as is common.

~~The following will more closely describe an example of the invention with the help of a drawing.~~

~~Figure 1 depicts a schematic section through a sleeping bag 1 with an outer shell 2 and an inner shell 3. Chambers 4 are arranged between the outer shell 2 and the inner shell 3. The chambers are divided by the dividing walls 5. The chambers 4 are filled with down or synthetic fibers. Inside, the dividing walls 5 are sewn to the inner shell 3. Refer to the enlarged detail A to view the connection to the outer shell 2. The dividing wall 5, which may consist of mosquito netting, is sewn to a weldable attachment strip 6 via a seam 8. The attachment strip 6 rests on the inside end of the outer shell 2, which is also constructed of a weldable material. The attachment strip and outer shell are joined by a band of weldable material like polyurethane, which overlaps the end of the attachment strip 6 and is welded in place. This construction produces an external shell 2 that is completely unbroken externally, has no seams, no abrasion prone glue spots, or externally located welding bands. In contrast to supplemental outer materials or separate covers, the design produces no noticeable increase in weight. If side seams or similar are present, these can be covered in the normal way with welded bands if it is not possible to avoid them with overlapping welds.~~

**Abstract**

The invention relates to a sleeping bag consisting of adjacent chambers (4) that are formed by partition walls (5). Said chambers (4) contain a filling material. The sleeping bag also consists of a zip and inner and outer linings (2, 3) which cover the chambers. The outer lining (2) consists of a waterproof material. The outer lining (2) and the partition walls (5) or the outer lining (2) and fixing stripes (6) being connected to the partition walls (5) consist of a material that can be sealed. The partition walls (5) are sealed onto the outer lining from the inside at the end of said walls or by means of the fixing strips (6).

**SLEEPING BAG****CROSS REFERENCE TO THE RELATED APPLICATIONS**

This application claims priority to PCT/IB00/01295 filed August 2, 2000, which in turn claims priority from DE 299 13 9211.2 filed August 12, 1999.

**BACKGROUND OF THE INVENTION****1. Field of the Invention**

This invention concerns a sleeping bag constructed of side by side chambers formed by dividing walls and filled with stuffing material, inner and outer shells that cover the chambers and a zipper.

**2. Description of the Related Art**

Sleeping bags designed for various purposes have been available in many different styles for a long time. When sleeping outdoors (without a tent), it is desirable to have protection from dampness and wetness caused by rain, dew, or snow. For this reason, sleeping bags are available with waterproof outer shells.

One example in current use is Super Dryloft from Gore, a membrane made of stretched Gore-Tex that is laminated onto nylon. Stretching the membrane increases the membrane's water vapor-permeability. However, it is moisture resistant and completely windproof. Micro-fiber fabrics, such as Pertex nylon, are used for less demanding requirements. Although these sleeping bags are essentially waterproof, they exhibit weak spots, especially in places where there are external seams.

In order to address this issue, it has been proposed to equip sleeping bags with separate outer coverings (like that available under the trade name C-tex) under which is located a cover made of vapor-permeable laminate. However, this necessitates carrying and packing an additional item.

## **OBJECTS AND SUMMARY OF THE INVENTION**

The purpose of this invention is to create a waterproof sleeping bag, the resistance characteristics of which are improved and with which it is unnecessary to carry additional item.

This purpose is fulfilled with the features described in Claim 1. The additional claims detail the invention's characteristics and further developments.

According to the invention, a sleeping bag consists of side by side chambers formed by dividing walls and filled with stuffing material, inner and outer shells that cover the chambers, and a zipper. The sleeping bag is characterized by the outer shell, which is made of a waterproof material; the outer shell and dividing walls or the outer shell and the attachment strips (bonded to the dividing walls), which consist of a weldable or glueable material; and the dividing walls, which are welded or glued at their ends or through the use of attachment strips to the inside of the outer shell. If dividing walls are used that are not weldable or glueable, these will be sewn to the attachment strips. It is preferable for the sleeping bag to have a waterproof zipper or a zipper that is covered with a waterproof outer flap, whereby, it is preferable for the outer flap to be welded or bonded to the outer shell.

It is preferable for the outer shell and the attachment strips to be constructed from a thermoplastic material like PVC or polyurethane or from a fabric that is coated with these materials. For welding, any material may be used that can be welded using common methods

(high frequency welding, hot air welding, hot sealing with the use of welding aids, heated wedge pressure welding, heat-pulse welding, radiant heat welding).

In order to maintain convection and promote evaporation, the dividing walls should be constructed of materials like tricot or mosquito netting fabric. The inner shell will be constructed preferably in the common manner from cotton, nylon fabric, or polyester fabric, in other words, a breathable textile and the dividing walls are sewn up with this material at their other, inner ends. The filling will be down or synthetic fibers as is common.

The following will more closely describe an example of the invention with the help of a drawing.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

Fig. 1 is a side view of a sleeping bag construction with adjacent chambers and a section Detail A.

#### **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

Referring now to Fig. 1, a schematic section through a sleeping bag 1 is shown with an outer shell 2 and an inner shell 3. Chambers 4 are arranged between the outer shell 2 and the inner shell 3. The chambers are divided by the dividing walls 5. The chambers 4 are filled with down or synthetic fibers. Inside, the dividing walls 5 are sewn to the inner shell 3. Refer to the enlarged detail A to view the connection to the outer shell 2.

The dividing wall 5, which may consist of mosquito netting, is sewn to a weldable attachment strip 6 via a seam 8. The attachment strip 6 rests on the inside end of the outer shell 2, which is also constructed of a weldable material. The attachment strip and outer shell are joined by a band of weldable material 7 like polyurethane, which overlaps the end of the

attachment strip 6 and is welded in place.

This construction produces an external shell 2 that is completely unbroken externally, has no seams, no abrasion-prone glue spots, or externally-located welding bands. In contrast to supplemental outer materials or separate covers, the design produces no noticeable increase in weight. If side seams or similar are present, these can be covered in the normal way with welded bands if it is not possible to avoid them with overlapping welds.